RS-422A/485 Isolated Serial I/O Board for PCI Express 2ch
COM-2PD-PE

This product is an isolated PCI Express bus-supported board designed for extending RS-422A/485 compatible serial communication functionality on your PC.

COM-2PD-PE has two RS-422A/485 communication ports.

Higher noise-resistant models with isolation between channels and between PC and bus line as well as a surge protection circuit for communication ports.

With a 128byte built-in FIFO buffer for transmission and reception of each channel, the product supports a baud rate of up to 921,600bps.

Windows/Linux device driver is supported with this product.

* The contents in this document are subject to change without notice.
* Visit the CONTEC website to check the latest details in the document.
* The information in the data sheets is as of May, 2025.

* Specifications, color and design of the products are subject to change without notice.

Features

Max. 921,600bps RS-422A/485 Serial Communication

The COM ports of this product support up to 921,600 bps.

COM-2PD-PE has two RS-422A/485-standard serial ports.

Possibly used as Windows, Linux-standard COM ports

Combining the product with our device driver COM-DRV makes it possible to use the product in the same manner as the COM ports of a PC.

This product supports communication using DCB structures in the Win32 API and Linux-standard system calls.

Isolation between channels and between PCs, surge protection for all signal lines

The channels are electrically isolated from each other and from the PC.

As isolation is provided between channels as well as isolation of the bus, this prevents electrical noise between channels as well as between the PC and external circuits. As surge protection is provided on all signal lines, you can safely use the boards in environments where you are concerned about surges causing incorrect operation or damage to the PC.

Up to 16 boards can be installed

Up to 16 boards of the same model can be mounted on a single PC.

Each channel is equipped with separate 128-byte FIFO buffers for transmit and receive

Equipped with a buffer memory for transmitting 128 bytes and receiving 128 bytes for each channel. These are FIFO format, useful for high speed communications and to reduce the load to the CPU when transmitting/receiving.
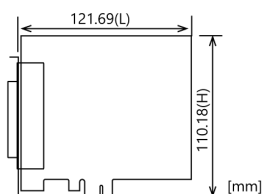
The control line for RS-422A/485 can be controlled and monitored by software

The control lines for RTS+, RTS-, CTS+ and CTS- can be controlled and monitored using software.

Included Items

Product [COM-2PD-PE] ...1
Please read the following ... 1

External Dimensions

121.69(L)

110.18(H)

[mm]

The standard outside dimension (L) is the distance from the end of the card to the outer surface of the slot cover.

Specifications

Function specification

Item	Specifications
Number of channels	2 channels
Interface type	RS-422A/RS-485
Isolation	Channel Isolation/Bus Isolation
Isolation voltage	Channel Isolation: 1000VDC, Bus Isolation: 1000VDC
Transfer method	Asynchronous serial transfer (Full/Half duplex)
Baud rate	30 - 921,600bps *1*5
Data length	5, 6, 7, 8 bits 1, 1.5, 2 stop bits
Parity check	Even, Odd, Non-parity
Controller chip	162850 or equivalent (Each channel has 128-byte receive and 128-byte transmit FIFO buffers.)
Connecting distance	1200m (Typ.) *2*3
Interrupt requests	1 level use *4
I/O address	Any 32-byte boundary
Power consumption	3.3VDC 1100mA (Max.)
PCI Bus specification	PCI Express Base Specification Rev. 1.0a x1
Dimension (mm)	121.69(L) x 110.18(H)
Weight	80g

*1 Data transmission at high speed may not be performed normally depending on the environment including the type of status of connected material of cable and environment.

*2 The table below lists an example of the relationship between baud rate and communication distance.

Communication distance	Baud rate
300m	115,200bps
600m	57,600bps
900m	19,200bps
1200m	9,600bps

Communication cable: 28AWG, double shielded cable, twisted pairs used for each +/- signal line.

*3 The table below lists the maximum communication distances of the terminator resistor value and individual cable diameters.
The terminators on the product (100Ω) and the terminators generally used with RS-422A/485(120Ω) are listed.

Maximum communication distances of the terminator resistor value (100Ω) and cable diameter

Terminator Resistor(Ω)	Cable Diameter	Maximum Communication Distance(m)
100	AWG28	400
	AWG26	700
	AWG24	1100
	AWG22	1200

Maximum communication distances of the terminator resistor value (120Ω) and cable diameter

Terminator Resistor(Ω)	Cable Diameter	Maximum Communication Distance(m)
120	AWG28	500
	AWG26	800
	AWG24	1200
	AWG22	1200

*4 A single interrupt signal "INTA" is output as a collection of interrupt input signals from two channels.

*5 Product with different board numbers are different in these specifications. See "Differences by Board Number" at the end of this document.
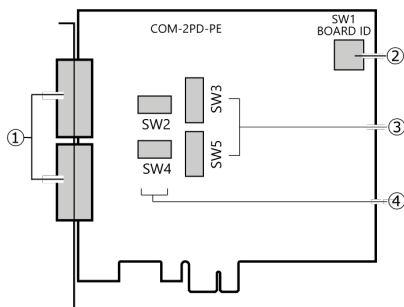
Installation Environment Requirements

Item	Specifications
Operating ambient temperature	0 - 50℃
Operating ambient humidity	10 - 90%RH (No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None
Standard	VCCI Class A, CE Marking (EMC Directive Class A, RoHS Directive), UKCA

Support Software

Name	Contents	How to get
Windows Version Serial communication driver COM-DRV(WDM)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Windows. This software supports communication using DCB structures in the standard OS Win32 API, and the SerialPort class in the .NET Framework and the pySerial module in Python. Various sample programs such as C# and Visual Basic .NET , Visual C++, Python etc. and diagnostic program useful for checking operation is provided.	Download from the CONTEC website *1
Linux Version Serial communication driver COM-DRV(LNX)	Software that makes it possible to use the product in the same manner as the COM ports of a PC running Linux. This software conforms to Linux-standard tty drivers, and the pySerial module in Python. The software includes various sample programs such as gcc (C, C++) and Python programs.	Download from the CONTEC website *1

*1 Download the files from the following URL.

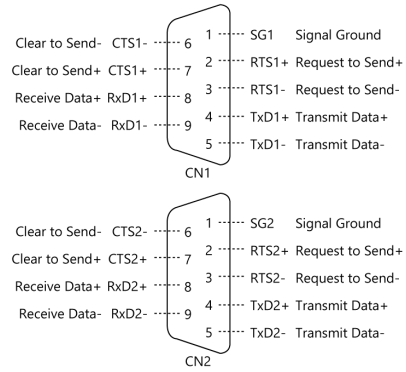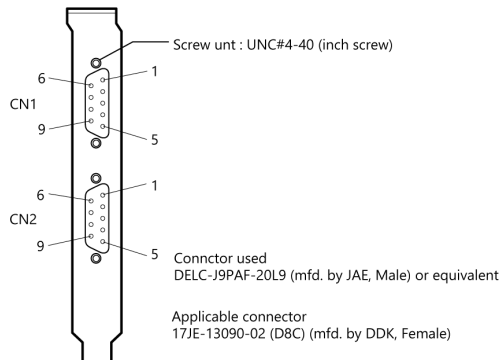https://www.contec.com/download/

Component Name

No.	Name	No.	Name
1	Interface Connector (CN1, CN2)	3	Data Transfer Mode Switch (SW3, SW5)
2	Board ID Setting Switch (SW1)	4	Terminator Setting Switch (SW2, SW4)

Connecting to an External Device

Connecting directly to the port connector

If connecting an external device directly from the connector on the board, use a cable purchased separately.

Pin Assignment

Screw unt : UNC#4-40 (inch screw)

Connctor used
DELC-J9PAF-20L9 (mfd. by JAE, Male) or equivalent

Applicable connector
17JE-13090-02 (D8C) (mfd. by DDK, Female)

CN1
- Clear to Send- CTS1- 6
- Clear to Send+ CTS1+ 7
- Receive Data+ RxD1+ 8
- Receive Data- RxD1- 9
- 1 SG1 Signal Ground
- 2 RTS1+ Request to Send+
- 3 RTS1- Request to Send-
- 4 TxD1+ Transmit Data+
- 5 TxD1- Transmit Data-

CN2
- Clear to Send- CTS2- 6
- Clear to Send+ CTS2+ 7
- Receive Data+ RxD2+ 8
- Receive Data- RxD2- 9
- 1 SG2 Signal Ground
- 2 RTS2+ Request to Send+
- 3 RTS2- Request to Send-
- 4 TxD2+ Transmit Data+
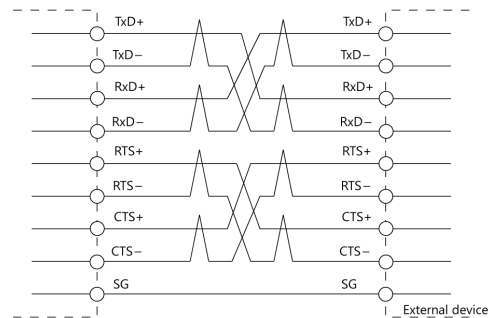- 5 TxD2- Transmit Data-

⚠ CAUTION

For TxD, RxD, and RTS, even numbered pins are + and odd numbered pins are -.

For CTS, even numbered pins are - and odd numbered pins are +. This is the opposite of the other signals, but is not a misprint.

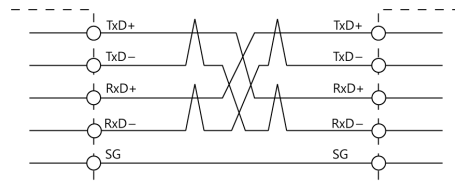## Types of Cable and Example Connections

The figures below show examples of how to connect the cable for the board.

The RS-422A/485 interface works based on a differential signal whereby the signal is carried by the potential difference between two lines (+ and -). Using twisted pair cable is recommended to improve resistance to noise.
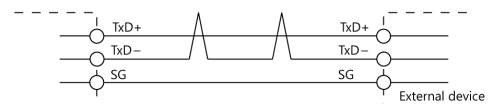
Example Connection RTS and CTS to a External Device in Full Duplex

Example Connection Oneself loop to RTS and CTS in Full Duplex

Example Connection in Half Duplex

⚠ CAUTION

If connecting between external devices and this card with faulty wiring, it will become the cause of failure.

Different in the specification

The products are different in specifications, depending on the card number as listed below.

COM-2PD-PE

Item	Board No.	
	No.7408, No.7408A, No.7408B	No.7408C or later
Baud Rate	2 - 921,600bps	30 - 921,600bps